PRESQUILE NARRATIVE REPORT January-December 1966

PRESQUILE NATIONAL WILDLIFE REFUGE
NARRATIVE REPORT
FOR CALENDER YEAR 1966

PERSONNEL

REFUGE MANAGER	JOHN C. FIELDS (1)
BIOLOGICAL TECHNICIAN	RAYMOND P. MCFARLAND
MAINTENANCEMAN	VACANT
CLERK-TYPIST	IRENE S. LIPCHAK
LABORERS	CARL W. CABE (2)
	PERCY R. HALL (3)

(1) E.O.D. JANUARY 25, 1966 — REPLACING EARL R. CUNNINGHAM
(2) E.O.D. FEBRUARY 24, 1966 — TERMINATED APRIL 22, 1966
(3) E.O.D. MAY 16, 1966 — TERMINATED SEPTEMBER 23, 1966

I. GENERAL

A. Weather Conditions

The data in the following table were provided by the Old Dominion Water Company in Hopewell, Virginia, and are applicable to Presquile Refuge.

	Precipitation (in inches-includes snowfall)			Temperatures	
	1966	Normal	Snow	Max. Temp.	Min. Temp.
January	4.76	3.64	28	73	9
February	3.87	2.75		69	8
March	1.23	3.42		85	22
April	1.91	3.23		90	30
May	3.34	4.01		91	31
June	3.30	4.41		95	45
July	6.55	3.23		99	57
August	2.92	3.23		95	58
September	4.48	3.57		93	42
October	3.70	2.55		85	31
November	1.61	2.02		79	25
December	3.60	3.50	10	73	14
Total	41.27	41.01	38		

The records show that precipitation was about normal for the Hopewell area. We were very fortunate in the area to have had relatively good precipitation while the rest of the state as a whole was still in a drought that has lasted several years.

Late January and early February saw temperatures average 18° below normal. The heavy snow of this same period was all melted by mid February.

March was the driest March on record for the Richmond area. It was late in April before we got good rains for plowing and planting crops. March and April were relatively cool months and the growing season was held up somewhat. A low of 32 on May 10th was a record and it was beginning to get dry again by the end of the month, but rains came just in time for crops.

June was extremely dry except for one thunderstorm we got that was confined mostly to us. A heat wave started in late June and lasted about three weeks. Temperatures ranged between 95 and 99.

Local residents said it was the worse one they had ever seen. July rains were on the last two days and were just in time for the corn crop that was beginning to suffer. By late August we were needing rain again and it came. Since that time we have bad sufficient rainfall. Winter temperatures were a little later than average getting here. One small snow in late November and then about ten inches in late December.

B. Habitat Conditions

1. Water

Water levels in the James River have been about normal or slightly below normal throughout the year. The poluted condition of the water prevents the growth of any submerged aquatics. The river water is tidal and normally varies from three to four feet between high water and low water. There are often times when it rises enough to flood the marshes and most of the timber, sometimes up to the deer fence. This action serves to provide water for the swamps and marshes thereby permitting the growth of natural foods in the marshes and numerous areas in the swamp where timber is open.

There were several occasions during the summer months when large numbers of dead fish were seen on the river banks around the refuge. This has not been attributed to any one cause, but there could be several reasons for it. There is a large amount of industrial and domestic waste dumped into the river in the Hopewell area; and there have been long dry spells throughout the hot summer months. The fish kills are probably attributed to a combination of several factors.

The long dry spells are believed to cause the salinity of the water to rise on some occasions. The figures below will show that so far they have not been high enough to be of danger to the native vegetation on the refuge. However, it is believed that when the James River Project (widening and deepening the ship channel into Richmond) is completed the salinities may jump a great deal; so it is probably best to keep a record. The following figures were obtained from the Old Dominion Water Company in Hopewell, and they were taken in the River at the pumping station near the Continental Can Company and the Allied Chemical Nitrogen Division on Highway 10.

The highest monthly salinity readings in parts NACL per million parts water.

Month	1964	1965	1966
January	6	8	36
February	3	8	39
March	9	10	12

Month	1964	1965	1966
April	14	14	13
May	12	16	12
June	13	20	14
July	18	24	26
August	18	28	42
September	18	32	58
October	13	42	12
November	12	40	8
December	12	42	9

2. Food and Cover

The refuge marshes and the numerous shallow areas in the refuge swamps produced an excellent crop of natural foods which included wild rice, smartweed, wild millet and partridge pea. The mast crop in the 800 plus acres of swamplands was good this year also. The waterfowl use on these areas has been extra high thus emphasizing the fact that there was an excellent natural food supply. Waterfowl have about completely denuded the east marsh and are now using the north marsh in large numbers.

Refuge cultivated crops and permanent pastures all made good growth and seed production this summer.

II. WILDLIFE

A. Migratory Birds - Geese

The goose population remained relatively high on the refuge throughout January and February. There was plenty of corn available, and they stayed close to the refuge and used the cultivated areas. While the deep snow was on the ground in early February we mowed some of the corn down and the geese and ducks promptly came in and cleaned it up. Then after the snow left there was still some standing corn that had some good ears in it. We thought it wasn't going to be used so we went over it lightly with the disk, more - or - less getting ready to plow. Then about 2,000 geese came in and started using. They stayed around later than geese usually do, mid April, and cleaned up most of the corn. Most of the other farmers in the area had already plowed their corn fields, but we wanted to wait until the geese got through with it. It was late February before any marked migration could be noted. After this they left pretty fast except for those that stayed longer than usual and cleaned up corn that was left. By late April the geese all left except about six that hung around most of the summer using the adjacent marshes and farm lands as well as the refuge. The snow and blue goose population is increasing a little each year.

The first geese seen this fall were 27 on September 22nd. Their number increased steadily from that time until mid November when they leveled off to over 10,000, the largest weekly averages ever to be reported at Presquile. The service plane operated by Norman counted over 11,700 on November 16th, but that was not a weekly average. When the geese first came in they were mostly using the marshes down the river south of the refuge and coming to the refuge during each day to feed. Later they quit going down the river every day. After the waterfowl hunting season opened the geese pretty well stayed on the refuge all of every day, either on the croplands or in the refuge marsh and swamps. However, on a few occasions they would use the Curles Neck Marsh across the river from the refuge. The areas up and down the river that usually have large concentrations of geese have reported less usage this year than normal. This probably accounts for our increase over previous years.

Ducks

Mallards, black ducks and wood ducks make up the bulk of our duck flock. There are often several hundred pintails on the east marsh. The ducks pretty much stay in the marshes and swamps during the day unless they get chased out by ice and snow. During the periods of extremely bad weather of last January and February when the marshes and creeks were frozen over they used the corn fields along with the geese. Large flocks of 5,000 or more of all of our dabblers could be seen in the corn fields. As can be seen from the NR forms duck numbers remained ralatively high through February. Then they quickly started migrating out for the nesting areas. In October of this year the ducks started coming in appreciable numbers and shortly after the hunting season started they bult up to a little above last year's level and remained there through December. The ducks have remained in the marshes and swamps during the day as usual; but they have often been seen feeding at dusk on the harvested corn and milo fields adjacent to the refuge. The farm manager on Presque Isle Farm has informed me that he has to keep them chased out of his fields where he has left some corn for his hogs. He says the ducks can clean up a two weeks supply of corn in a few days. He says they feed there by the thousands, all species. The increase in ducks this fall is attributed to an increase in mallards over last year. Wood ducks increased some and blacks have remained about the same as last year.

Included in this report are charts shwoing duck and geese peak populations and use days for several winter periods prior to this year. Some pertinent conclusions can be drawn from these charts.

Doves

Mourning dove populations were relatively high on the refuge at the beginning of the year when the hunting season was open on them.

After the hunting season closed and the severe weather was over, in February, the population dropped down to a low level which was quite a bit below the previous year and remained there throughout the entire summer, up to the time the hunting season opened on them again. The refuge population was about 50% lower this summer than the previous average summer levels. It is generally believed that the severe weather of late January caused high mortality in the general area. We found a few on the refuge that were in a weakened condition but we never found any dead ones. They are cleaned up quickly by predators here after they die or become weak. At the end of this report period the refuge population appeared to be back up to about 1000. This is about normal for this time of the year.

Other Migratory Birds

A common snipe count of 56 birds was made in the marshes in late December of this year. This is just a few above average. Sometimes a hundred or more killdeer can be seen on the croplands area of the refuge.

Great blue herons have been seen throughout the year, and their population appears to be normal. It is not unusual to see more than a dozen on a waterfowl census of the refuge.

Little green herons and common egrets are quite numerous on the refuge during the summer months but scarce or absent during the colder periods. Their numbers have been normal.

Nine cattle egrets in breeding plumage were seen and photographed on the refuge this spring. This is the first recording of this bird on the refuge, but we are not so sure that it was the first time they have used the refuge. It seems likely that they have used the refuge before but were probably overlooked for reporting purposes. They were seen on the refuge no less than ten times this summer; and were seen frequently on Presque Isle Farm just across the river.

B. Upland Game Birds - Bob White Quail

There are approximatly three covies of quail on the refuge totaling 40 birds as this period ends. We had a rather good nesting season but their numbers have, as usual, declined down to what is the apparent carrying capacity of the refuge. The management practices carried out here for waterfowl must not be conducive to a high quail population.

Turkey

The refuge turkey population is estimated to be between ten and fifteen birds. Three males to each female. Two different broods were observed this summer. One had three young and another had two. The

young were just a shade smaller than the adult birds. During the winter post-season waterfowl banding season the turkey can frequently be seen on the twice daily trips up the swamp creeks. They often feed at the traps. Then they can be seen quire often in the corn fields late in the summer and they become relatively tame. When the state hunting season opens on them they realyy make themselves scarce; so we believe that maybe some extra wild ones come in from the outside thus causing the refuge flock to get more cautious.

Ring Necked Pheasants

These birds have been seen on the refuge in singles and a pair on several occasions, but we have not seen any signs of them reproducing. There is now a pair seen often flying across the river between the refuge and Presque Isle Farm. The manager of Curles Neck Farm raises several thousand of these birds every year for market and hunting clubs; and we feel sure that what we have are escapees from there.

C. Big Game Animals

White-tail deer are the only big game animals that use the refuge; and there are too many of them. Their population is estimated to be over two hundred. The only way we have of estimating their numbers is to figure that the highest number seen at any one time during the year is about half of the population. A herd of over one hundred has been seen this year, in the early spring. They all appear to be in excellent health and production was very high this year. It was not unusual to see twins and at least one set of triplets was seen. It doesn't appear that the population is increasing or decreasing by any large numbers, but it is believed to be too high. Their principle feeding area is the refuge croplands. They get a large percentage of the food that we raise for waterfowl; and it is not believed that they contribute a great deal to the population outside the refuge. We are planning to submit a proposal to have a short bow hunt on them this year in hopes of decreasing the refuge herd and providing some more recreation for the public.

D. Fur Animals, Predators, Rodents and Other Mammals

The small mammals on the refuge include raccoon, muskrat, grey squirrel, opossum, ground hog, stripped skunk, cotton tail rabbit, red fox and beaver.

The raccoon is increasing from a low population of last year. The population is not extremely high now but it is more than it was last year. At the rate it is growing now it will be too high in a few years if it doesn't slow down some. They could possibly do a lot of damage to our corn crop.

The muskrat population is relatively low. Only a few houses are seen in the marshes but there is a good population of bank rats. They get right much corn out of the banding traps and do a lot of burrowing under the traps. They are not a big problem.

Grey squirrels are common on the refuge. Their population is about normal. They get quite a bit of corn from our crop. They could develop into a problem.

Opossums are scarce on the refuge. They are seldom seen.

Skunks are at a low population level. Singles are seen quite frequently but not near as frequent as in past years.

The rabbit population is very low at this time. This is accredited to the foxes and a low in the population cycle.

One pair of red foxes raised a brood of four young on the refuge this year. They were frequently seen throughout the summer months, but it is believed that they are all gone now but the parents. They can be heard about every night in the headquarters area.

The groundhog population is being kept down by refuge personnel using rifles in the spring and summer when the young first start leaving the dens. The population is relatively low at this time. Approximately sixty were killed this year. There is only a nucleus of the population that was here several years ago when the control program was started on them. They still damage the corn a little.

Beaver are still present, probably one family, as can be verified from new cuttings seen often on the east side of the refuge. None have actually been seen. They have a dam across the river in a lake on private land.

No other predators or fur bearers have been seen on the refuge this year.

E. Hawks, Eagles, Owls, Crows, etc.

Hawks are numerous on the refuge throughout the year. Red-tailed and red-shouldered are pests around the duck traps when we are trying to band. They will get the ducks so excited they will entangle themselves in the corner of the traps. Then the hawks will kill and eat them through the wire. When we leave the doors open on the traps the hawks will go in and catch the ducks and fly out the door when they hear us coming. They won't go in the funnels.

Barred owls are also guilty of this same behavior.

Other hawks and owls that have been seen on the refuge this year

include the species that are native to the area. No unusual sightings have been made.

There were six bald eagles using on or near the refuge in early 1966. All but one young left for the summer. Now they hav e all come back for the winter. They use on the refuge regularly. There could be more near the refuge but we haven't seen them. This is about half of the population of just a few years ago.

One pair of ospreys used the river around the refuge all summer and left the area in late September.

The american crow and possibly some fish crows are present on the refuge but it is a small flock of about one hundred. They do not present a problem except when they get the pecans before they fall for us or the deer and raccoons. The crow population is about the same as in previous years.

F. Other Birds

The cattle egrets mentioned earlier in this report is the only other bird note of any significance. This bird should be added to the bird list as an occasional visitor.

G. Fish

The only fishing on the refuge is in the proclamation waters of the James River around the refuge. No check is made of catches. The water is so poluted that it would probably be impossible to eat the fish. It is said that they taste like fuel oil. Large numbers of dead fish have been seen on several occasions during this year, mostly during the hot dry periods.

H. Reptiles

The refuge reptile population remained relatively high this year. There is a relatively high population of water snakes; and an occasional cotton-mouth moccasin has been seen. Only an occasional black snake and king snake has been seen on the uplands. There is an overabundance of turtles and terrapins in the creeks and marshes; and it is believed that they are one of the major limiting factors in wood duck production. They are most numerous in the best wood duck rearing areas. Terrapins can sometimes be seen by the scores, sitting above the water line. We will endeavor to start some kind of control program on them in the near future. There are some local commercial fishermen that would jump at the chance to catch turtles in our creeks.

I. Disease

None.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

Farming activities and banding operations accounted for a major portion of our operational program during the year. Maintenance and rehabilitation work on the tractors, buildings, deer fence and roads and the ferry system was carried out as time permitted.

Major maintenance activities were as follows:

1. On the Super M. tractor we put a new flywheel, clutch and pressure plate.

2. On the Case tractor we put a new tire on rear and two on the front and two new heads on the motor.

3. Replaced the ferry cable twice.

4. At the ferry landing on the island side we replaced the 12"x12"x27' oak beam over the ferry ramp with a metal I-Beam; and replaced two of the piling supporting the I-Beam.

5. We cleaned the mud out of the ferry slip twice.

6. Rebuilt the floating boathouse, putting on all new drums and replacing all wood with creosoted wood.

7. Demolished one 10'x10' reinforced concrete building that was of no value to us. Property No. 4.

8. Installed a rest room in the shop, including toilet, lavatory, septic tank and drainage field.

9. Constructed 25 wood duck boxes to be put up before the next nesting season.

10. Made a jet pump out of an old sprayer pump we took off of a tractor we sold. We put a Briggs & Stratton engine on it. It will assist us in posting, etc.

New equipment purchased this year:

1. Plymouth Station Wagon.

2. John Deere 38 sickle bar mower.

3. Two new chain hoists for the ferry ramp to replace two that were stolen two years ago.

4. A wall furnace for shop.

Materials obtained through surplus scources from Fort Lee scrap yard.

1. 10 KW Generator with 3/4 ton trailer.

2. Sections of dragline boom and several hundred pounds of scrap metal for making various repairs on refuge.

3. Tent poles for wood duck boxes.

4. Aluminium fork lift mats.

B. Plantings

1. Aquatic and Marsh Plants

None.

2. Trees and Shrubs

None.

3. Upland Herbaceous Plants

None.

4. Cultivated Crops

Sixty seven acres of corn was planted this year. Nineteen acres of Pioneer 345 in fields 5x and 5z, twenty four acres of Funks G-72 and 83 in field 2b and twenty four acres of Ken Bred, Golden Acres A 20 Y in field 2d. Even though there were some rather long dry periods during the year we were lucky and got moisture each time just before the corn suffered too much; so we had a rather good crop. We averaged 90 bushels or better per acre on the whole crop. Treatment of the corn land was as follows. After plowing and discing the land we had a fertilizer company to broadcast 600 pounds of 5-10-10 per acre. Then we planted the corn about ten inches apart in forty inch rows. When the corn first started germinating we had 60 pounds of liquid nitrogen put on along with Atrazine at the rate of 2 pounds of 80% wettable powder per acre. Corn has received good usage several rows deep from all field edges. We harvested 1,325 bushels, some from each field. Some was harvested from each field edge and from the ends and from several areas where the geese were not likely to get much use from. Some was also harvested from the field center to provide landing strips for the geese. Over half of the corn crop is still available for the waterfowl. We will start knocking portions of the corn down after the hunting season is over thus providing some food during the critical winter periods.

There did not appear to be a great deal of difference in production between any of the corn varieties. They were all good varieties for the refuge. They were some of the lower growing varieties of the species but none were actually low enough for geese to get good usage from in a standing state. However, we believe that the better production gives them greater value than a dwarf variety would. Dwarf corn is not considered resistant enough to adverse weather conditions for us to gamble on planting it. It also is not as good a producer as we need for the goose flock we have. We can always knock some down during critical weather periods without adverse criticism from the public.

Buckwheat was planted in sixteen foot strips in the corn fields between every twelve rows of corn. We planted this in August. The fertilizer we put on prior to planting corn served this crop. The nitrogen and Atrazine was left out of the area we planted buckwheat. The buckwheat made good growth and produced a good crop of see but the geese did not get a chance to use it. The strips were so narrow and the corn was so high on each side that the waterfowl were scared to land in it. We will make the strips about fifty feet wide this year and plant only one strip in each corn field. Deer got a major portion of the buckwheat.

In the spring we plowed all wheat under except ten acres of field 8. We harvested this and got enough seed for replanting this fall plus two hundred bushels we transferred to Pungo Refuge. This fall we planted forty eight acres of wheat in fields 2a and 2c and twenty acres in fields 5w and 5y and twelve acres in the north end of field 8. All of this wheat received 500 pounds of 10-10-10 or the equivalent in 8-8-8 per acre and the ten acres that we harvested received 60 pounds of liquid nitrogen per acre early this spring.

Wheat received very intensive usage on the entire acreage this spring until the geese left for the summer. It has also received intensive use this fall and winter. It grew good this fall and was several inches high when the geese started coming in. It has received very intensive use and the ground appears bare from a distance. However, upon closer inspection one can see that there are sufficient plants available to provide good browse when some warm days arrive.

No work other than mowing was done on any of the permanent pastures. There was good growth throughout the warmer months on all of the pastures. They were mowed once or twice each month, whenever needed. At this time the pastures are about 90% or more fescue and there is a very small amount of clover in them. We will try to get some clover seeded in some of the pastures early this spring. Waterfowl used the pasture some when they first came in and then some more after they had cleaned up all of the wheat. We feel that they would have used them a great deal more if there had been more clover in them.

C. Collections and Receipts

Seeds and Other Propagules

Seed purchased for refuge use during the year included the corn that we planted. That was three bushels of Pioneer 345, two bushels of Funks G-83 and four bushels of Ken Bred A20Y. We had two bushels of Funks G-72 left over from last year that we planted in the fields with the G-83. 1325 bushels of corn was harvested by contract with the farm manager of Presque Isle Farm. The corn will be used for bait in banding operations and the remainder will be fed to the waterfowl before they leave in the spring. 1200 lbs. of Japanese buckwheat was purchased for planting in strips in the cornfield. No wheat was purchased. We harvested 350 bushels from the ten acres of field 8. This is our harvest allotment. We saved 150 bushels for planting this fall and transferred 200 bushels to Pungo Refuge.

D. Control of Vegetation

Chemical control of Jimson weed in the corn fields was by application of 2 pounds 80% Atrazine per acre. This was put on by commercial spreader at corn germination time. It cost $250.00 for the entire 67 acres or $3.73 per acre. We received 98% kill on all wide leaf weed plants in the corn crop.

Small spot infestations of morning glory in the corn fields were treated late in the growing season with a one percent solution of 2-4D. About five acres were treated at a cost of $3.00 per acre. This treatment was 90% effective.

Fifteen acres of Johnson grass was treated in the wheat and buckwheat fields and permanent pastures. In the wheat and budkwheat fields treatment consisted of periodically discing and spraying twice during the summer with Dalapon at the rate of five pounds of acid equivalent per acre. The cost was $12.50 per acre and control ranged from 50% in the pastures where we couldn't disc to 75% in the wheat fields.

E. Planned Burning

Nothing to report.

F. Fires

None.

IV. RESOURCE MANAGEMENT

A. Grazing

None.

B. Haying

None.

C. Fur Harvest

None.

D. Timber Harvest

None.

E. Commercial Fishing

None on refuge proper. However, there are several commercial fisherman using the proclamation waters of the James River around the refuge. No permits are issued to them and no checks are made of their catches. We have talked to them on several occasions and found that they mostly catch catfish and most of them are so small they release a large portion of them. They use traps and trot lines. They sell them dressed out to be shipped to Chicago and New York.

F. Other Uses

There were no special use permits outstanding as of December 31, 1966.

V. FIELD INVESTIGATION AND APPLIED RESEARCH

A. Progress Report

Banding in calendar year 1965 did not produce one duck. This was because of an administrative directive stating that none should be banded prior to close of the 1965 hunting season. At the beginning of 1966 all existing traps were repaired and prebaited. The cannon nets were set and baited on two sites on the croplands. One new walk-in trap was built up Little Creek. A total of three walkin traps in Little Creek plus 12 Ohio traps and 25 dove traps distributed in both swamp creeks and on the river shore were used. The entrances on the dove traps were widened and made good catches on black ducks.

Geese were very reluctant to get close enough to the nets so the nets were thrown only once during the post-season period and only 37 geese were banded. During the season this fall we figured we would possibly have to trap some geese during the season if any from this flock were going to get banded. So we tied two nets together and put a narrow strip of net all around it to keep the geese in after they were caught. Then we put nine cannons on the double net and loaded them with the 140 grain loads. We threw the net one time during the season, December 19th. When we got through we had banded 227 new geese. We got

six recaptures. Less then twenty birds escaped before they were banded. Duck banding started in the creeks just before the hunting season was over and ended early in March.

In 1966 we banded 263 geese, 698 mallards, 361 black ducks, 27 wood ducks and 14 other duck, mostly widgeon.

We started post-season banding on doves soon after we stopped banding waterfowl. Even though the refuge dove population was extremely low we banded 210 in about a month. We started getting so many repeats that we quit. We started pre-season dove banding in early July but the population was still low and we got only 129 before the hunting season opened on them in September. Our total for 1966 was 339. We banded 50 purple grackles that we took out of the dove traps.

We tried pre-season banding of wood ducks but could not get them to take any bait.

Nest Predator Survey

A nest predator survey was conducted during the early nesting season this year. The full report on this is in the files. We established a transect with 75 dummy nest sites and placed two eggs at each site. 66% of the sites were disturbed by raccoons, skunks, crows and foxes. The same transect line will be used in future years to determine trends in the predator population.

VI. PUBLIC RELATIONS

A. Recreational Use

There are no established recreational areas on the refuge. Tours of the croplands area are conducted to aquaint the public with refuge objectives and allow them to see some wildlife in a natural environment. The waters around the refuge are used for boating, skiing and fishing but no head counts are made of the people using. Refuge tours were provided for nine organized groups that included Girl and Boy Scouts, church groups, school classes and one group of wives of workers at Fort Lee, Virginia.

B. Refuge Visitors

There were 196 official and unofficial visitors to the refuge in 1966.

Official visitors were as follows:

4-7-1966	Mr. Claudie Denton	Regional Office	Farming and fiscal matters.
6-30-1966	Mr. Bill Kinsinger	USGMA	Borrow cannon nets.
7-11-1966	Mr. Harold Sheppard	Pungo Refuge	Pick up surplus wheat.
9-14&15-1966	Mr. L. S. Givens	Regional Office	Inspection
9-16-1966	Mr. John Willett	Petersburg National Battlefield, Supt.	Refuge tour.
9-23-1966	Mr. Bill Kinsinger	USMGA	Bring cannon net back.
9-23-1966	Mr. Robert H. Bain	USMGA	Plan law enforcement.
9-28-1966	Mr. D. R. Daniel	USMGA	Escort TV photographer.
12-13&27	Mr. Fred Scott	Richmond(VSO)	Christmas bird count.

Unofficial visitors as they appear on Register.

April 2, 1966	Dr. Schulhof and five Cub Scouts from Hopewell on refuge tour.
April 24, 1966	Mr. & Mrs. D. R. Ambrosen and Mr. R. L. Waterfield from Back Bay Refuge on refuge visit.
May 18, 1966	25 members from Brownie Troop 611 of Hopewell on refuge tour.
June 9, 1966	35 members of a sixth grade class of Enon Elementary School on refuge tour and year end party.
June 16, 1966	11 members of Boy Scout Troop 175 from Petersburg, Va. on refuge tour for merit badge work.
Sept. 2, 1966	Miss Jean Lynn from Petersburg, bird watching.
Oct. 8, 1966	7 members from the Assembly of God Church in Hopewell on refuge tour.

Oct. 28, 1966	Mr. Sonny Pullium from Station WTAR-TV, Norfolk, taking coler movies of waterfowl.
Oct. 29, 1966	Mr. Joe Bellamy and 65 Brownies from Branch's and Ramsey's Churches in this county on refuge tour.
Nov. 11, 1966	18 members of Brownie Troop 611 of Hopewell on refuge tour.
Nov. 15, 1966	10 wives of Fort Lee workers on refuge tour.

C. Refuge Participation

Manager Cunningham presented a conservation talk to seven ladies of the Hopewell Garden Club.

Manager Fields presented talk and slides to twelve members of the Green Thumb Garden Club of Hopewell.

Manager Fields attended meetings of the Hopewell Rotary Club and Varina-Charles City Sportsmen Club.

D. Hunting

There is no public hunting on the refuge. Success on surrounding areas was reported to be about the same as last year, but not any better. The waterfowl did not venture off the refuge as much as they usually do. No information is available on actual kill numbers on the adjacent hunting areas.

E. Violation

None.

F. Safety

Safety meetings or informal discussions were held each month or as the situation called for them.

Safety equipment purchased this year included an air operated jack and two five ton jack stands for shop.

Safety inspections were made of electrical systems and improvements were recommended but work has not started on them yet.

There has been no lost time accidents since the refuge was established on March 11, 1953.

VII. OTHER ITEMS

A. Items of Interest

John Fields assumed duties as Manager on January 26, 1966 and Earl Cunningham departed for Yazoo Refuge to take over as Manager there.

Manager Fields and Biological Technician McFarland attended Banding Workshop at Mattamuskeet Refuge on October 31, November 1 and November 2.

B. Photographs

Photographs taken during the year follow.

C. Signature

Submitted By:

John C. Fields
Refuge Manager

Dated January 23, 1966
Approved by:

Regional Office

Regional Refuge Supervisor

JAN 26 1967

3-1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Presquile

MONTHS OF January TO April, 1966

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods seen	Production Estimated total
Swans:											
Whistling							4-24 4-30				
Trumpeter											
Geese:											
Canada	3500	1800	1350	2000	1800	60	10		600,490		
Cackling											
Brant											
White-fronted											
Snow	2	2							1,863		
Blue	35	25	25	25	20				10,200		
Other											
Ducks:											
Mallard	450	150	100	100	90	50	40		124,860		
Black	500	200	75	50	75	40	20		123,920		
Gadwall											
Baldpate					50	10			9,220		
Pintail					10	5			15,530		
Green-winged teal									20		
Blue-winged teal		10	40	20	40	40	10		1,120		
Cinnamon teal											
Shoveler				20	20	10	0		350		
Wood	400	350	250	100	150	100	160		74,620	6	60
Redhead									42		
Ring-necked									70		
Canvasback											
Scaup											
Goldeneye											
Bufflehead									616		
Ruddy									668		
OtherH. Merg.	25	10							770		
C. "	10	15	10	25	10				5,160		
Red breasted Merg.									2,220		
~~Coot~~ Coot									65		

(Over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese	612,553	8600	
Ducks	499,506	2500	
Coots	657	20	

SUMMARY

Principal feeding areas Geese in cultivated fields - Ducks in hardwood swamp and adjacent marshes.

Principal nesting areas Wood ducks in hardwood swamp.

Reported by John C. Fields

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE Presquile MONTHS OF January TO April, 1966

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:	1/1-1/8 8 days									
Whistling										
Trumpeter										
Geese:										
Canada	8500	8000	8300	8500	8600	7900	7200	7200	6100	375 0
Cackling										
Brant										
White-fronted										
Snow	22	22	40	40	40	30	20	20	10	15
Blue	120	120	160	165	165	125	120	125	110	100
Other										
Ducks:										
Mallard	1800	2000	2500	1200	2500	2300	1700	1000	1200	400
Black	1700	2400	2200	1800	2200	2000	1300	750	1500	650
Gadwall										
Baldpate	50	75	100	150	250	300	100	100	100	25
Pintail	200	300	75	25	25	550	350	150	350	150
Green-winged teal										10
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood	1400	1500	1300	1100	1200	800	750	400	250	250
Redhead			6							
Ring-necked		10								
Canvasback										
Scaup										
Goldeneye										
Bufflehead			4	4	25	20	20	15		
Ruddy	10	25		4	10	15		15		15
Other										
H. Merganser	50	40	35	150	110	90	75	50	10	75
C. "	25	100	90	40	30	30	20	10	40	50
Red breasted Merg.	6	12	15			15	20	15		10
Coot										

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE Presquile NWR MONTHS OF May TO August, 1966

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	6	6	4	4	4	3	3	1	1	1
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	15	15	12	10	8	4	4	4	4	4
Black	16	12	8	8	6	6	6	6	6	6
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood	150	100	110	100	100	100	100	100	100	100
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										

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Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Presquile NWR MONTHS OF May TO August, 1966

(1) Species	(2) Weeks of reporting period: 11	12	13	14	15	16	17	18 (4 days)	(3) Estimated waterfowl days use	(4) Production: Broods seen	Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	1	1	1						252	0	0
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	4	4	4	4	4	4	4	4	772	0	0
Black	6	6	6	6	6	6	6	6	828	0	0
Gadwall											
Baldpate											
Pintail											
Green-winged teal											
Blue-winged teal											
Cinnamon teal											
Shoveler											
Wood	120	120	130	140	160	160	160	160	15,130	32	60
Redhead											
Ring-necked											
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy											
Other											
Coot:											

(Over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	0		0
Geese	252	6	0
Ducks	16,780	170	60
Coots	0	0	0

SUMMARY

Principal feeding areas Swamps

Principal nesting areas Swamp, timber

Reported by John O. Fields

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species — In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: — Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: — Average weekly populations x number of days present for each species.

(4) Production: — Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: — A summary of data recorded under (3).

(6) Peak Number: — Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: — A summary of data recorded under (4).

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE Presquile NWR MONTHS OF September TO December, 1966

(1) Species	(2) Weeks of reporting period: 9/1-3 (1)	9/4-10 (2)	9/11-17 (3)	9/18-24 (4)	9/25-10/1 (5)	10-2/8 (6)	10/9-15 (7)	10/16-22 (8)	10/23-29 (9)	10/30-11/5 (10)
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada					75	400	600	2500	4500	6000
Cackling										
Brant										
White-fronted										
Snow								12	20	25
Blue								14	50	50
Other										
Ducks:										
Mallard	4	14	18	25	40	100	150	300	400	700
Black	6	12	18	20	75	150	250	450	650	650
Gadwall									15	20
Baldpate								10	10	15
Pintail					5	10			15	15
Green-winged teal									20	25
Blue-winged teal					10	15				
Cinnamon teal										
Shoveler										
Wood	160	160	150	150	150	200	250	750	800	800
Redhead										
Ring-necked										25
Canvasback										
Scaup										10
Goldeneye										
Bufflehead										
Ruddy							10	10	40	15
Other										
Coot								10	10	15

3-1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Presquile NWR

MONTHS OF September TO December, 1966

(1) Species	(2) Weeks of reporting period: 11/6-12 (11)	11/13-19 (12)	11/20-26 (13)	11/27-12/3 (14)	12/4-10 (15)	12/11-17 (16)	12/18-24 (17)	12/25-31 (18)	(3) Estimated waterfowl days use	(4) Production: Broods seen	Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	8500	9000	9500	9600	10,200	10,300	10,800	10,300	645,925		
Cackling											
Brant											
White-fronted											
Snow	20	18	21	18	20	18	20	21	1,456		
Blue	125	127	125	135	150	170	185	220	9,457		
Other											
Ducks:											
Mallard	950	2000	2000	2100	2100	2800	2800	2900	135,791		
Black	1100	1400	1400	1500	1900	2000	1900	1900	109,043		
Gadwall			25			15	10		595		
Baldpate	10	15	50	40	50			50	1,750		
Pintail	25	25	450	450	750	350	250	250	18,585		
Green-winged teal	5		40	35	150	25	30	75	2,835		
Blue-winged teal									175		
Cinnamon teal											
Shoveler											
Wood	1200	1600	1500	1500	1800	2200	2100	1800	120,250		
Redhead											
Ring-necked									175		
Canvasback											
Scaup	5							10	175		
Goldeneye											
Bufflehead											
Ruddy								10	70		
Other C. Merganser	30	25	10	20	20	10		5	1,365		
					25	20	60	50	1,085		
Coot:	30	15	15	20	15	10	10	10	1,120		

(Over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese	656,838	11,005	
Ducks	391,894	7,150	
Coots	1,120	30	

SUMMARY

Principal feeding areas Cultivated croplands. Refuge marshes and swamps.

Principal nesting areas

Reported by John O. Fields, Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species — In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: — Estimated average refuge populations.

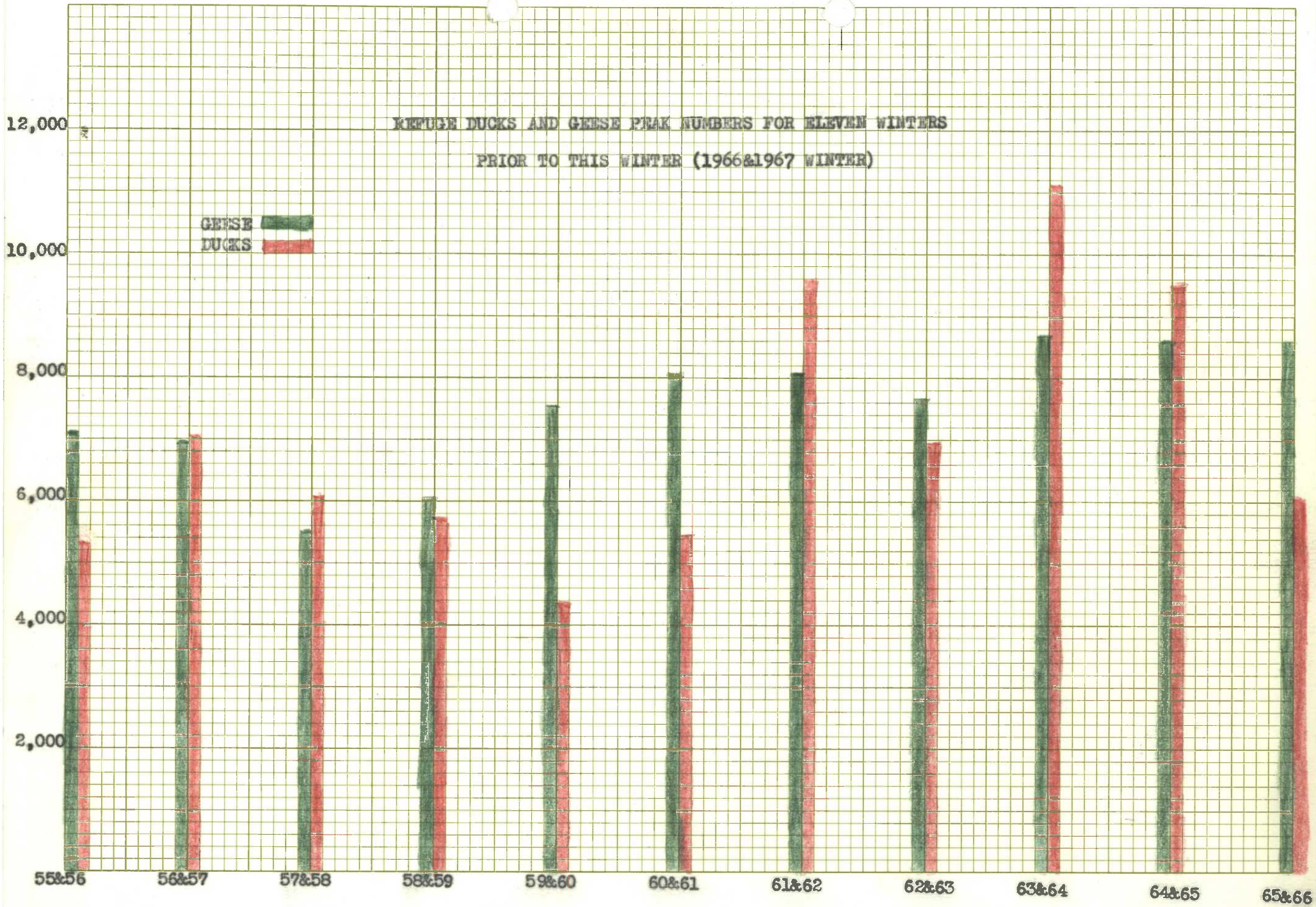
(3) Estimated Waterfowl Days Use: — Average weekly populations x number of days present for each species.

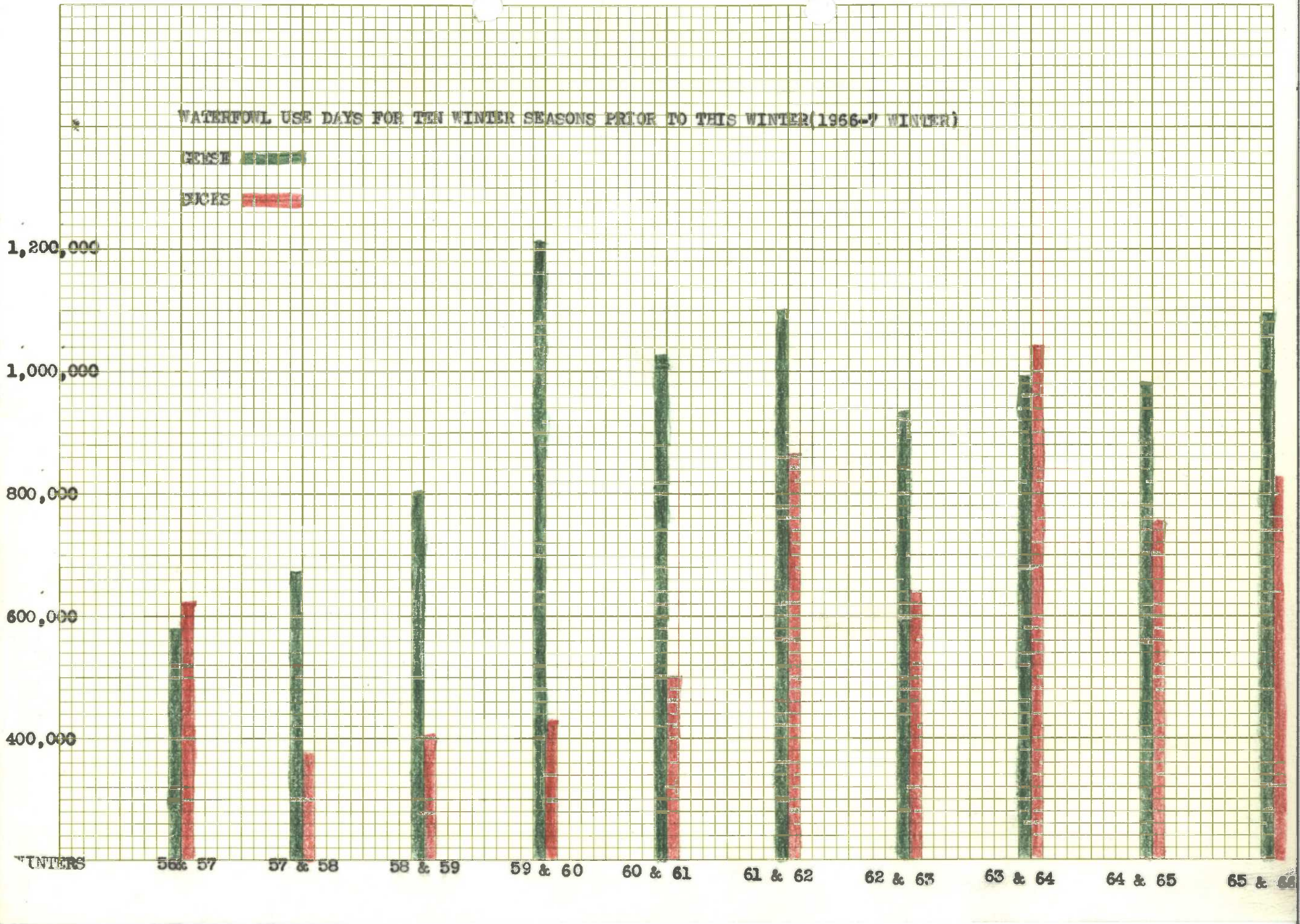
(4) Production: — Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: — A summary of data recorded under (3).

(6) Peak Number: — Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: — A summary of data recorded under (4).


REFUGE DUCKS AND GEESE PEAK NUMBERS FOR ELEVEN WINTERS
PRIOR TO THIS WINTER (1966&1967 WINTER)
GEESE
DUCKS
12,000
10,000
8,000
6,000
4,000
2,000
55&56
56&57
57&58
58&59
59&60
60&61
61&62
62&63
63&64
64&65
65&66


WATERFOWL USE DAYS FOR TEN WINTER SEASONS PRIOR TO THIS WINTER(1966-7 WINTER)
GEESE
DUCKS
1,200,000
1,000,000
800,000
600,000
400,000
HUNTERS
56& 57
57 & 58
58 & 59
59 & 60
60 & 61
61 & 62
62 & 63
63 & 64
64 & 65

3-1751
Form NR-1A
(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge Presquile N.W.R. Months of January to May 1 19 66

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. Water and Marsh Birds:										
Great Blue Heron	6	1-1-66	20	4-29-66	10	4-30-66	0	0	0	1,010
II. Shorebirds, Gulls, and Terns:										
Laughing Gull	1	4-20-66	15	4-30-66	15	4-30-66	0	0	0	250
Ring Billed Gull	25	1-28-66	150	4-10-66	120	4-30-66	0	0	0	15,000
Herring Gull	20	1-29-66	75	4-20-66	75	4-30-66	0	0	0	5,000
Great black backed Gull	10	1-30-66	10	1-30-66	2	2-28-66	0	0	0	1,250
Caspian Tern	1	4-20-66	1	4-20-66	1	4-20-66	0	0	0	100

(over)

(1)	(2)		(3)		(4)		(5)			(6)
III. Doves and Pigeons:										
Mourning dove White-winged dove	200	1-1-66	450	3-2-66	200	4-30-66				1,200
IV. Predaceous Birds:										
Golden eagle										
Duck hawk										
Horned owl										
Magpie										
Raven										
Crow	20	1-1-66	40	4-30-66	40	4-30-66	0	0	0	50
Bald Eagle	2	1-1-66	3	2-1-66	1	4-30-66	0	0	0	4

Reported by John C. Fields

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first migration record for the species for the reporting period.

(3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated species days use (average population X no days present) of refuge during the reporting period.

3-1751
Form NR-1A
(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge Presquile Months of May to September 1966

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. Water and Marsh Birds:										
Great Blue Heron	12	5/1	52	8/15	32	8/30	0	0	0	2,750
American Egret	8	5/1	30	8/15	24	8/30	0	0	0	2,400
Little Blue Heron	12	6/25	18	8/15	10	8/30	0	0	0	1,500
Little Green Heron	10	6/25	24	8/15	20	8/30	0	0	0	1,250
II. Shorebirds, Gulls, and Terns:										
Ring-billed gull	120	5/1	250	8/15	100	8/30	0	0	0	24,000
Herring Gull	40	5/1	100	8/15	25	8/30	0	0	0	7,500
Laughing Gull	6	5/20	60	5/30	12	8/30	0	0	0	1,750
Caspian Tern	1	5/10	6	7/15	2	8/15	0	0	0	450
Common Tern	2	5/10	12	7/30	4	8/30	0	0	0	720
Killdeer	2	5/1	48	8/15	6	8/30	0	0	0	1,440

(over)

(1)	(2)		(3)		(4)		(5)			(6)
III. Doves and Pigeons:										
Mourning dove	150	5/1	350	8/15	25	8/30		40	120	20,000
White-winged dove										
IV. Predaceous Birds:										
Golden eagle										
Duck hawk										
Horned owl										
Magpie										
Raven										
Crow	20	5/1	30	8/15	15	8/30				2,400
Bald Eagel	2	5/1	2	5/1	1	8/30				150

Reported by

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first migration record for the species for the reporting period.

(3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated species days use (average population X no days present) of refuge during the reporting period.

3-1751
Form NR-1A
(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge Presquile Months of September to December 1966

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. Water and Marsh Birds:										
Great blue heron	32	9/1	32	9/1	10	12/30	0	0	0	1,200
American egret	24	9/1	25	9/2	1	12/14	0	0	0	550
Little green heron	20	9/1	20	9/1	2	11/20	0	0	0	680
Little blue heron	12	9/1	12	9/1	1	12/2	0	0	0	350
Pied-billed grebe	1	9/21	6	12/27	4	12/30	0	0	0	250
Horned grebe	2	10/29	5	12/27	3	12/30	0	0	0	150
Cattle egret	2	9/20	2	9/20	2	9/20	0	0	0	2
II. Shorebirds, Gulls, and Terns:										
Ring-billed gull	120	9/1	250	12/27	250	12/30	0	0	0	24,000
Herring gull	30	9/1	200	12/27	200	12/30	0	0	0	14,000
Bonaparte's gull	2	12/18	6	12/27	6	12/30	0	0	0	110
Laughing gull	12	9/1	12	9/1	2	10/2	0	0	0	350
Great black-backed gull	2	9/15	14	12/27	14	12/30	0	0	0	750
Common tern	4	9/1	1	11/20	1	11/20	0	0	0	125
Common snipe	11	9/3	56	12/27	32	12/30	0	0	0	2,550
Killdeer	5	9/1	120	11/25	75	12/30	0	0	0	4,200

(over)

(1)	(2)		(3)		(4)		(5)			(6)
III. Doves and Pigeons:										
Mourning dove	75	9/1	1,000	12/30	1,000	12/30	0	0	0	75,000
White-winged dove										
IV. Predaceous Birds:										
Golden eagle										
Duck hawk										
Horned owl	0						0	0	0	180
Magpie										
Raven										
Crow	20	9/1	100	12/2	70	12/30	0	0	0	32,000
Bald eagle	1	9/1	6	11/25	6	12/30	0	0	0	420

Reported by John C. Fields

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first migration record for the species for the reporting period.

(3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated species days use (average population X no days present) of refuge during the reporting period.

3-1750b
Form NR-1B
(Rev. Nov. 1957)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Presquile   For 12-month period ending August 31, 1966

Reported by John J. Fields   Title Refuge Manager

(1) Area or Unit Designation	(2) Habitat Type	Acreage		(3) Use-days	(4) Breeding Population	(5) Production
	Crops	250	Ducks	832,237	100	60
	Upland	20	Geese	1,091,517		
	Marsh	250	Swans			
	Water	1629	Coots	3,831		
	Total	2119	Total	1,927,585		
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			

(over)

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

(1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.

(2) Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

(3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.

(4) Breeding Population: An estimate of the total breeding population of each category of birds for each area or unit.

(5) Production: Estimated total number of young raised to flight age.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Presquile Months of January to April, 19 66

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Bobwhite Quail	Fields & edges 344 acres	8	3	21	50-50	0	0	0	43	
Turkey	1,329	100	None observed		3 males to 1 female	0	0	0	15	Turkey population intermittent. Shared with adjacent areas.
Pheasant (Ringneck)	300	300	0	0	1 male	0	0	0	1 male	This one pheasant is apparently one that was pen raised and released on adjacent land - as he was relatively tame for awhile.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Presquile Months of May to September, 1966

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Turkey	Entire refuge 1329 acres of hardwood swamp, marsh & cropland	90	1	2	3 male to 1 female	0	0	0	15	Turkeys probably don't use refuge all og the year. Adjacent lands provide part of their needs.
Bob-white Quail	Field, borders and swamp edge. 300 acres	7	3	6	1-1	0	0	0	40	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge Presquile Months of September to December, 19 66

(1) * Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Bob-white quail	Field borders and swamp edges(300 a)	7.5	4	40	1-1	0	0	0	40	The annual production here disappears fast.
Wild turkey	Entire refuge (1,329 a.)	90	0	0	3-1	0	0	0	15	Turkey population is intermittant. Increases are noted at the biginning of each hunting season.
Ring-necked pheasant	Field borders and swamp edges.	150	0	0	1-1	0	0	0	2	Apparently escapees from commercial breeders on adjacent plantations.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1753
Form NR-3
(June 1945)

BIG GAME

Refuge Presquile Calendar Year 1966

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
White-tailed deer	Entire refuge (1,329 a.)	50	0	0	0	0	0	0	50	0		200	200	2-3

Remarks:

Reported by Fabian C. Fields

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

(2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge: once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each</u> <u>species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge Presque Isle NWR Year ending April 30, 1966

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs						(5) Total Population
								Share Trapping						
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re-stocking	For Re-search	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
Raccoon	1,329	7	0	0	14*	0	0	0	0	0	0	0	0	190
Muskrat	Marsh, river & creek banks.(600 acres)	5	0	0	0	0	0	0	0	0	0	0	0	120
Stripped Skunk	Uplands & edges (300 acres)	10	0	0	0	0	0	0	0	0	0	0	0	30
Grey Squirrel	Hardwood swamp and edges(800 acres)	10	0	0	0	0	0	0	0	0	0	0	0	80
Groundhog	Upland, edges and riverbanks(348 acres)	6	0	0	25*	0	0	0	0	0	0	0	0	58
Red Fox	1,200	200	0	0	0	0	0	0	0	0	0	0	0	6
Cottontail Rabbit	Fields & edges (300 acres)	6	0	0	0	0	0	0	0	0	0	0	0	50
Beaver	Tidal marsh, and swamp(1000 acres)	250	0	0	0	0	0	0	0	0	0	0	0	4

* List removals by Predator Animal Hunter

REMARKS: #14 - Raccoons removed(killed) from waterfowl trapping sites during post-season banding.

*25 - Ground hogs removed according to control plan with gas cartridges in burrows.

Reported by John C. Fields

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

(2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

3-1755
Form NR-5
60701

DISEASE

Refuge Presquile Year 19 66

Botulism

Period of outbreak None

Period of heaviest losses

Losses:

	Actual Count	Estimated
(a) Waterfowl		
(b) Shorebirds		
(c) Other		

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl		
(b) Shorebirds		
(c) Other		

Areas affected (location and approximate acreage)

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.

Condition of vegetation and invertebrate life

Remarks No disease

Lead Poisoning or other Disease

Kind of disease None

Species affected

Number Affected Species	Actual Count	Estimated

Number Recovered

Number lost

Source of infection

Water conditions

Food conditions

Remarks No disease

NR-6

Bureau of Sport Fisheries and Wildlife

PUBLIC RELATIONS

(See Instructions on Reverse Side)

Refuge Presquile

Calendar Year 1966

1. Visits

a. Hunting 0 b. Fishing 1,100 c. Miscellaneous ~~185~~ 196 d. TOTAL VISITS ~~1,285~~ 1,296

1a. Hunting (on refuge lands)

TYPE	HUNTERS	ACRES	MANAGED BY
Waterfowl	0		
Upland Game	0		
Big Game	0		
Other	0		

Number of permanent blinds 0

Man-days of bow hunting included above 0

Estimated man-days of hunting on lands adjacent to refuge ~~175~~

1b. Fishing (area open to fishing on refuge lands)

TYPE OF AREA	ACRES	MILES
Ponds or Lakes		
Streams and Shores	300	6

1c. Miscellaneous Visits

Recreation 185 Official 11

Economic Use _____ Industrial _____

2. Refuge Participation (groups)

TYPE OF ORGANIZATION	On Refuge NO. OF GROUPS	On Refuge NUMBER IN GROUPS	Off Refuge NO. OF GROUPS	Off Refuge NUMBER IN GROUPS
Sportsmen Clubs			1	30
Bird and Garden Clubs				
Schools	1	55		
Service Clubs				
Youth Groups	4	124		
Professional-Scientific	4	4		
Religious Groups	2	7		
State or Federal Govt.	3	15		
Other				

3. Other Activities

TYPE	NUMBER	TYPE	NUMBER
Press Releases	0	Radio Presentations	0
Newspapers (P.R.'s sent to)	0	Exhibits	0
TV Presentations	0	Est. Exhibit Viewers	0

3-1756

(Rev. 4/63)

INSTRUCTIONS

Item 1: Total of a, b, and c, equal d.

"Visit" - definition. Any person who is on refuge lands or waters during a day or part thereof for the purpose of: hunting, fishing, bird-watching, recreation, business or economic use, official visit, or similar interest. INCLUDE - those who stop within the refuge while traveling on a public highway because of an interest in the area. EXCLUDE - persons engaged in oil or other industry not directly related to the refuge, persons using refuge as most direct route or principal avenue of traffic, and those boating on navigable rivers or the Intercoastal Canal, unless they stop to observe wildlife on the refuge.

Computing visits. Where actual counts are impractical, "sampling" is used with midweek and weekend samples varied by season or weather. A conversion factor of 3.5 (of passengers per car) is used when accurate figures are not available. Each refuge will develop a conversion factor for boats based on range of usage. Count a camper once for each 24-hour period or fraction thereof.

Item 1a: Acres - of refuge open for each type of hunting.

Managed hunts require check in and out of hunters, issuance of permits, or assignment of blinds.

Other - INCLUDE crow, fox, and similar hunting.

Lands adjacent to refuge. Normally considered within 1 mile or less of boundary, unless established sampling procedures cover a wider area. For big game hunting, the distance may be greater.

Item 1b: Acres of streams open to fishing, if practical; otherwise just miles open. Information on "shores" is primarily for coastal fishing.

Item 1c: Recreation. INCLUDE photography, observing wildlife, picnicking, swimming, boating, camping, visitor center use, tours, etc. TOTAL Recreation, Official, and Economic Use visits under Item 1.

Industrial. INCLUDE persons engaged in industry, i.e., oil industry or factories. EXCLUDE these from Item 1.

Item 2: INCLUDE the "On Refuge" groups in Items 1c and 1. In "Off Refuge" column include only those group meetings in which refuge employees actually participate. EXCLUDE these from Items 1c and 1.

Item 3: Exhibits - INCLUDE displays, fairs, parades, and exhibits OFF the refuge; EXCLUDE those ON.

3-1757
Form NR-7
(Rev. June 1960)

(1)

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS

Refuge Presquile Year 19 66

Species	Collections and Receipts (Seeds, rootstocks, trees, shrubs)						Plantings (Marsh - Aquatic - Upland)						
	Amount (Lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Loss
None													

(1) Report agronomic farm crops on Form NR-8
(2) C = Collections and R = Receipts
(3) Use "S" to denote surplus

Total acreage planted:
Marsh and aquatic 0
Hedgerows, cover patches 0
Food strips, food patches 0
Forest plantings 0

Remarks:

76148

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge ~~Presquile NWR~~ County Chesterfield State Virginia

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Waterfowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./Tons	Acres	Bu./Tons			
Corn- Funks, Pioneer & HyBred	0	0	15	1,325 Bu.	52	4680 BU.	67		
Japanese Buckwheat	0	0	0	0	12	1200 LBS.	12		
Seneca Wheat	0	0	10	350 Bu.	70	0	80	Wheat	80
								Overseeded Browse	25
								Crop of ryegrass Permanent Clover & Fescue Pasture	108
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations 0 Haying Operations 0 Grazing Operations 0

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	0			
				2. Other	0			
				1. Total Refuge Acreage Under Cultivation				257
Hay - Wild				2. Acreage Cultivated as Service Operation				257

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

INT.DUP.,D.C.61-88850

3-1570
NR-8a
(4/54)

REFUGE GRAIN REPORT

Refuge Presquile Months of January through December, 1966

(1) Variety*	(2) On Hand Beginning of Period	(3) Received During Period	(4) Total	(5) Grain Disposed of				(6) On Hand End of Period	(7) Proposed or Suitable Use*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Wheat (Seneca)	0	350 Bu	350 Bu.	200 Bu.	150 Bu.	0	350 Bu.	0			
Corn	255 Bu.	1,325 Bu.	1,580 Bu.	0	0	500 Bu.	500 Bu.	1,080 Bu.		1,080 Bu.	
Corn (Hybred)	2 Bu.	9 "	11 "	0	11 Bu.	0	11 "	0			
Japanese Buckwheat	0	1,200 lbs.	1,200lbs.	0	1,200 lbs.	0	1,200 lbs.	0			

(8) Indicate shipping or collection points Hopewell, Virginia

(9) Grain is stored at Refuge

(10) Remarks Corn on hand to be used for banding and emergency feeding.

*See instructions on back.

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR–9.

(3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.

(4) A total of columns 2 and 3.

(6) Column 4 less column 5.

(7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters granary," etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

INT.-DUP. SEC., WASH., D.C. 17065

3-1761
Form NR-11
(2/46)

TIMBER REMOVAL

Refuge Presquile Year 1936

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
none								

Total acreage cut over..... Total income.....

No. of units removed B. F..... Method of slash disposal.....
Cords.....
Ties.....
.....

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

Refuge

ANNUAL REPORT OF PERSTICIDE APPLICATION

Proposal Number: ~~Bosque~~ 66-1,2&3

Reporting Year: ~~1966~~

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
May 10,1966	Jimson Weed and other wide leaf corn field pest plants.	Refuge Fields Nos.2 & 5	67	Atrazine	100 lbs. 80%	1,6 lbs. a.e./A.	Water	Commercial Vender
July 2, 1966	Morning Glory & Wild Buckwheat	Refuge Field Nos. 2 & 5	5	2-4-D	1 gallon	1%	Water	Tractor Mounted PTO sprayer
July 7 & 21, 1966	Johnson Grass	Refuge Field Nos. 2, 5&8	15	Dalapon	75 lbs.	5 lbs.a.e./ A	Water	Tractor Mounted PTO Sprayer

10. Summary of results (continue on reverse side, if necessary)

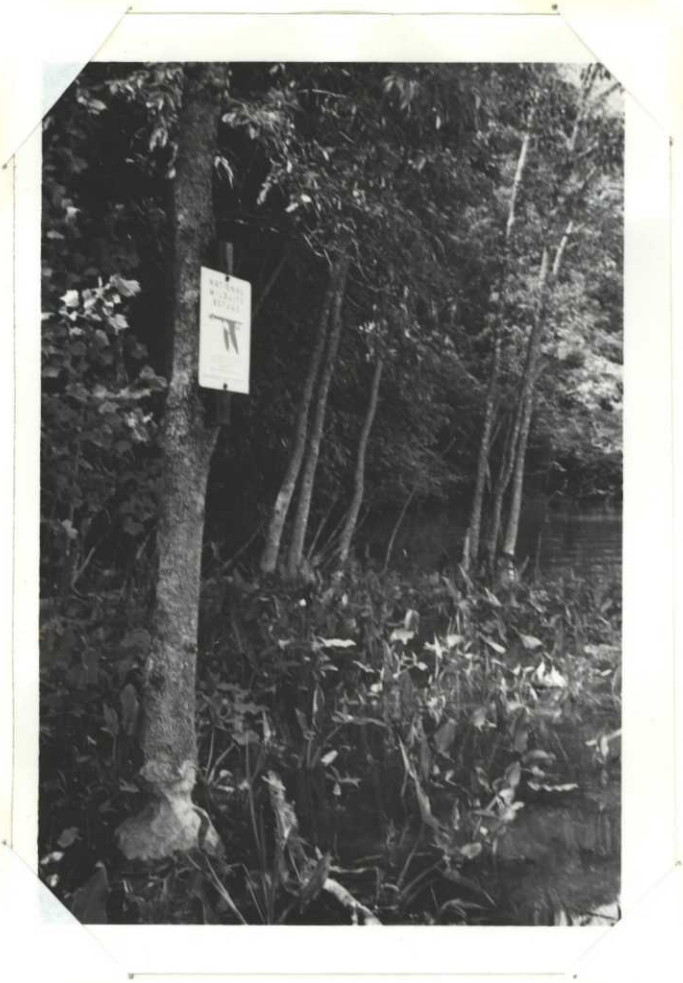
Atrazine was applied along with liquid Nitrogen by commercial spreader. Control of Jimson weed was 98% until late in the season when some growth started that cold weather killed before it became too thick. 2-4-D treatment of thick growths of vines in the corn fields was 90% effective. Dalapon treatment of spot infestations of Johnson grass was in addition to periodic discing in wheat fields and permanent pastures. Kill was from 50 to 75%.

Loaded on the ferry on the way to the refuge. Boy Scouts visiting refuge as part of the requirements for wildlife and conservation merit badges.

A group of 65 Girl Scouts and their leader observing wildlife on the refuge.

Cattle egrets at Presquile this year. This is the first recording of these birds on the refuge and should be added to the bird list. They were here several times during the year.

Mallards, black ducks and wood ducks in Little Creek. A typical scene in our two swamp creeks.



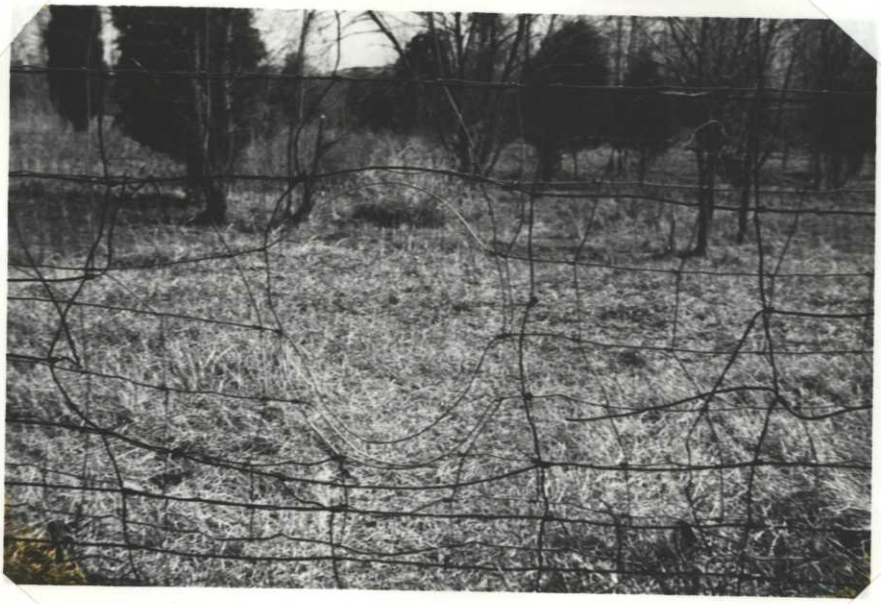
We know that there are some beaver on the refuge but they are seldom seen. Another reason why posting is a never ending job.

A large percentage of over 10,000 geese that are using the refuge this winter. Scene over our east marsh.

Our east marsh early in the summer. A muskrat house. This is excellent marsh for young wood ducks in the summer and a very important resting and feeding area in the winter.

The same marsh, denuded, by large concentrations of geese, pintails, mallards and blacks. Wild rice, wild millet and smartweed made good growth here this year.

Part of our deer herd on the wrong side of the deer fence. A short bow hunt will be proposed this year in hopes of reducing the deer numbers thus providing some more recreation for people. Photo by Earl Cunningham



One of many holes in the 1.8 miles of deer fence. This one has been patched several times and new fence has been placed over the hole, yet they still come through. They have to get through to get to the croplands.

Trailer used for transporting geese from cannon net to holding pen.

View showing our good corn crop of the year and new station wagon we received in March.

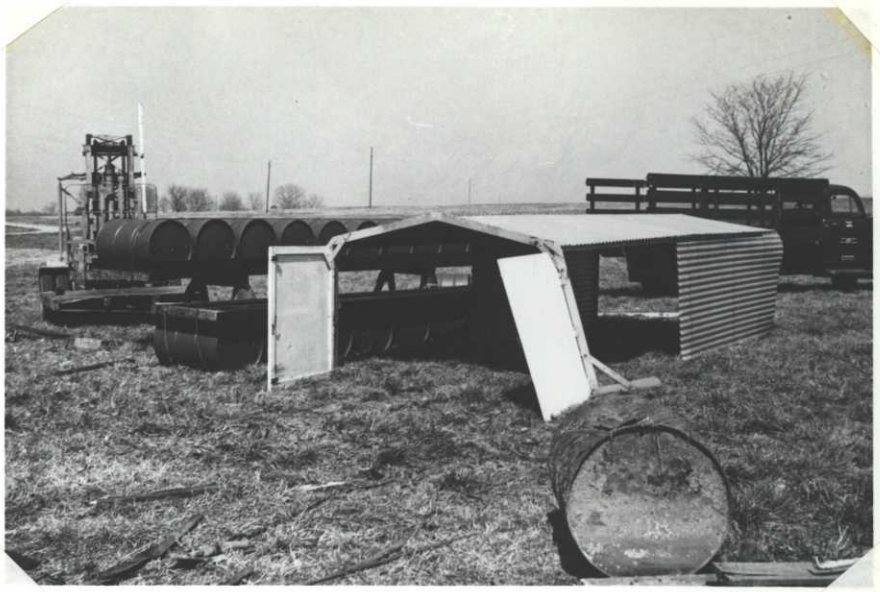
Local farmer contracted to harvest some of our corn for banding and emergency feeding. Unloading from harvester to be transferred to storage room in dairy barn. 1325 bushels were harvested.

View showing refuge ferry sitting in the mud in ferry slip. Keeping the mud out used to cost us several hundred dollars a year in contracting the work to local tugs to blow it out with their propellers.

A refuge idea that saves us the price of having the ferry slip cleaned out. This blade adapted to the fork lift is dropped to the bottom and pulls the mud out of slip to be taken away by water.

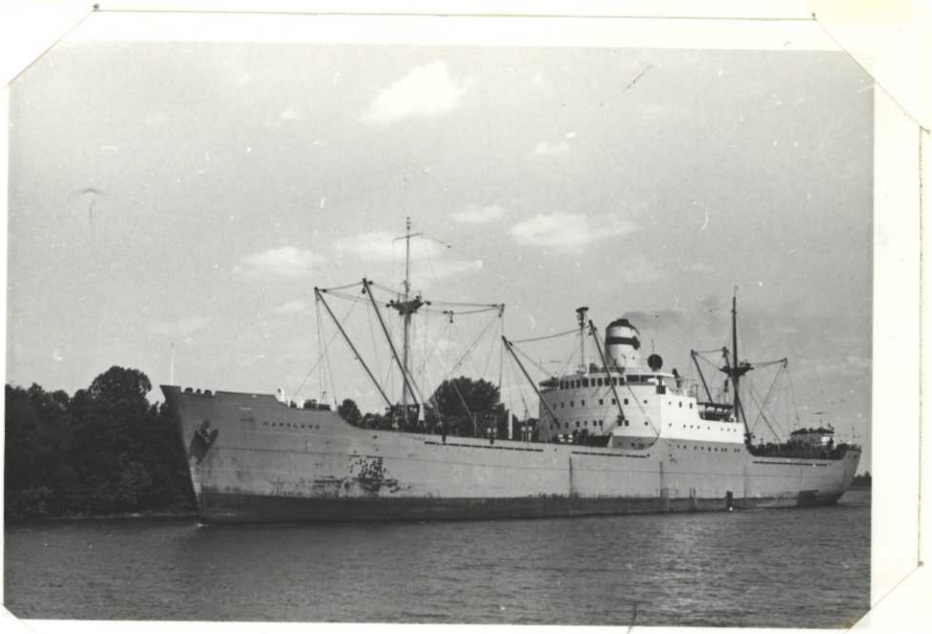
Another refuge idea adapted to the fork lift. Two sections of dragline boom picked up from surplus scources and a boat winch combine to give us ten more feet in height.

This idea saved us the price of contracting a high priced barge with a crane on it to replace the rotten oak beam over the ferry ramp with the pictured I-Beam.



In the process of rebuidling the boat house. We replaced all barrels with barrels picked up from surplus sources. We also replaced all wood with creosoted lumber.

The boat house back in the water. Like new.



Some river traffic that goes by the refuge. These ships load and unload in Richmond. The refuge is in the background.

More river traffic. There are several large sand and gravel dredging operations near the refuge. These are multimillion dollar operations that provide a large part of building materials throughout the state.